

Monsanto

FROM : J. R. Condray - General Offices - B3NJ (4-5254)  
 (NAME LOCATION PHONE)

DATE : March 10, 1978  
 SUBJECT : Site Impact Study - Seattle  
 Minutes of Meeting - 2/21/78  
 REFERENCE :  
 TO : FILE

cc: D. B. Edwards  
 H. Hand  
 R. L. Liss  
 D. Martin  
 S. E. McNab  
 M. N. Miller  
 R. S. Nelson

The meeting opened with a handout of Appendices A through I and a listing of hazardous substances from the Environmental Reporter. The Appendices give specific materials that will be regulated in the future either by EPA or will be governed by Monsanto's social responsibility. These Appendices will be discussed as we review the specific impacts.

1. Effluents - Specific materials of interest in process effluents can be found on Appendix A - suspect and indicated carcinogens, Appendix B - toxic pollutants from Section 307, Appendix C - priority pollutants, Appendix D - conventional pollutants, Appendix E - non-conventional pollutants, and the hazardous substances list.

The plant has two outfalls, one a process outfall which discharges to the Metropolitan Treatment System and a non-contact cooling water outfall that discharges to the Duwamish River. The processes contributing to the process outfall discharge include steam plant, the technical Vanillin department, the USP Vanillin Department, the cooling tower, and the warehousing operations. The plant has an in-place containment system that prevents spills from going into the River. All spills are either contained or discharged to the process outfall.

#### Recommendations

- a. A recommendation was made to obtain an updated sewer map determining where the various processes can be sampled on the sewer flow. This particular drawing may be available in the spill containment plan.
- b. It was recommended that a list of expected pollutants in the process outfalls needs to be developed.

Site Impact Study - Seattle  
Minutes of Meeting - 2/21/78  
March 10, 1978  
Page 2

- c. A sample of the process outfall discharging to the Metro System would give the most information on specific compounds discharged in our water effluents at Seattle.
  - d. A sample of the VBL solution would be desirable for analysis of specific compounds in view of its potential discharge to either the Metro or to the Sound.
  - e. It was recommended that the potential for contamination of the cooling water discharge to the Duwamish River be determined.
  - f. It was recommended that Bob Kaley in the Environmental Science Section of MIC be contacted for guidance on sampling methods, sample stabilization, transportation methods and other analytical concerns related to this program.
2. Emissions - As many as 50 potential sources of emission loss are available at the plant. Only a dozen or so of the sources are currently permitted. Three emission sources stand out as the major stacks of concern:
- a. the oil still jets
  - b. the boilers
  - c. the autoclaves

It was decided that the autoclaves represent the major area of concern in terms of specific compound losses. Other sources, such as the clarifier, may actually represent larger emission losses in terms of hydrocarbons, but these can be rather well calculated from existing data. For example, material balance data shows that 22 - 30 pounds of toluene is lost per 100 pounds of vanillin. These losses are split between air and effluent losses. Material balance data also shows that from 6 - 12 pounds of isopropyl alcohol are lost per 100 pounds of vanillin. These too are split between air and water losses.

Recommendations

- a. A recommendation was made that we define the emission sources and give a listing of specific materials expected in each.

Site Impact Study - Seattle  
Minutes of Meeting - 2/21/78  
March 10, 1978  
Page 3

- b. That if sampling is suggested that the autoclave would represent a major sampling point for specific unknown compounds.
- 3. Hazardous Wastes - The plant has a very active program underway to qualify a disposal site for VBL solids and VSB-50 materials now being disposed of at the Tulalip Landfill. This program includes determining the toxicity of the material by running LD-50 and LC-50 as well as determining the polycyclic aromatic hydrocarbon contents of the material. At present, this includes only the VBL solids, but should also include VSB-50 materials.

Two unknown areas were highlighted:

- a. Oil from the still area which is now disposed of - This oil is primarily mineral oil containing some phenolics and is discharged at a rate of about 100 gallons per day.
- b. Oil from the compressor area - This particular area oil is of a pydraul type and is discharged at about a rate of 200 gallons per month.

Recommendations

- a. It is recommended that the VSB-50 material likewise be subjected to toxicity testing to determine its hazardous waste class.
  - b. It is recommended that the oils currently disposed of by methods not well understood be evaluated and included in with the hazardous disposal.
  - c. It is recommended that VSB-50 be evaluated as a profitable fuel source to eliminate its landfill disposal.
  - d. It is recommended that other wastes now handled as general trash but including materials such as bags that have contained copper sulfate and other wastes be segregated and handled in a proper fashion.
- 4. On-Site Burial - There are no known on-site burials at the Seattle facility. Several of the current plant staff have been at the site since it was originally developed, and they will be consulted to determine if on-site burial or disposal has taken place during the life of the plant.

Site Impact Study - Seattle  
Minutes of Meeting - 2/21/78  
March 10, 1978  
Page 4

Recommendations

- a. It is recommended that plant personnel available at the time that the plant initiated operation be contacted to determine if any on-site disposal has taken place during the life of the plant.
5. Groundwater Contamination - It is not expected that groundwater contamination in the area of the plant can be traced to the plant's operations. There may be PCB's present in the surface water in that PCB has been used in the past as a lubricant at the plant and also the fact that PCB is used by Boeing for some of their operations and there is an outfall adjacent to the plant from Boeing. Apparently, the city of Seattle does not use underground water as drinking water in the area. Spills from prior operations in the Resins area may have contributed to surface water contamination; however, it is expected that this material would have leached to the river and would not be present in significant quantities today.

Recommendations

- None
6. Noise - A recent plant boundary survey was completed. This survey can be found in the Environmental Assessment Report. One area exceeds the regulation that applies. This one area is not expected to be of concern and should be handled through the normal assessment approach.

Recommendations

- None
7. Ambient Air - It is estimated that the autoclave off-gasses should represent around 95% of the ambient emissions in terms of specific compound concerns. The clarifier represents a rather large source of emissions of toluene, but these emissions can be determined more than likely from material balances.

Recommendations

- a. A recommendation was made that dispersion calculations be used to determine if toxics from the air emissions are reaching the plant property line at concentrations of concern.

Site Impact Study - Seattle  
Minutes of Meeting - 2/21/78  
March 10, 1978  
Page 5

8. Soil - The recently installed spill control system prevents most sources of soil contamination. The soil may have contamination from prior operations; however, it is expected that most of this contamination would be leached to the river. Analysis by the local regulatory agency have identified vanillin in soil at the plant perimeter roadway. The comment was made that since vanillin is a natural product, it is ubiquitous in its presence.

Recommendations

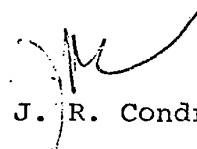
None at this time

9. River - With the new spill containment system, materials cannot get to the river and the only discharge to the river is non-contact cooling water through our permitted NPDES outfall. At this time, it is not expected that our impact on the river is not significant.

The PCB issue raised in No. 5 above suggests that river sediment and possibly river samples should be conducted.

Recommendations

- a. Determine if PCB can be detected in the river or sediment adjacent to the plant.

  
J. R. Condray

JRC:csv

LOOK @ ALL PRIORITY POLLUTANTS

WHAT CARCINOGENICS - ASK VON NESS FOR

WHAT CHEMICALS TO SAMPLE

WHERE TO SAMPLE

BOB KALBY - 4-4763

CONTACT PERSON IN MONSANTO

TO HAVE DAYTON LABS RUN SAMPLE

SAMPLE - IN COMING WATER

METRO OUTFALL

DOWNSTREAM OUTFALL

W. discharge area

ANY WAY TO ISOLATE SAMPLE FROM TECH

RIVER WATER

{ SLUDGE SAMPLE  
VEL

GO TO DAYTON FOR ESTIMATE TO RUN & COLLECT.

\$1500 - \$2000 / Sample